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10/550,740	08/24/2006	Bernd Wenderoth	278703US0PCT	8331
22850 7590 12/16/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER STANLEY, JANE L				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/550,740

**Applicant(s)**

WENDEROTH ET AL.

**Examiner**

JANE L. STANLEY

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 18 is/are allowed.  
6) ☒ Claim(s) 1-17 is/are rejected.  
7) ☒ Claim(s) 13 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/ISD)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

### **DETAILED ACTION**

Applicant's response filed **3 September 2008** has been fully considered. **Claims 1-17** are pending; **Claims 1-9 and 11-13** are amended, **claim 10** is as previously presented and **claims 14-18** are new.

#### ***Claim Objections***

**Claim 13** is objected to because of the following informalities: the claim recites "partly saturated heterocycles" which appears to be a miss-typing of "partly **unsaturated** heterocycles" based upon Applicant's original and amended claim 1 and further based upon Applicant's original disclosure (see page 6 lines 9-12). Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 15** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 15** recites "wherein component c)" however, it is unclear if applicant intended to mean "wherein component d)" (see original specification, page 6 lines 34-37). For the purpose of this office action, the Examiner has interpreted "wherein component c)" to be "wherein component d)".

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenderoth et al. (WO 02/08354 A1, using U.S. PGPub 2003/0164470 as English language equivalent), in view of Ashikhmin et al. (SU 1838362 A3, Derwent Abstract).

**Regarding claims 1-2**, Wenderoth et al. teaches an antifreeze concentrate ([0019] In 2) based on alkylene glycol, glycerol and/or their derivatives ([0019] In 2-3), the antifreeze concentrate comprising (instant component b) from 0.05 to 10% by weight, based on the a total amount of the concentrate, of one or more carboxamides and/or sulfonamides (**see disclosed component a**) ([0020]), where the amides may be unsubstituted or alkyl-substituted ([0022] In 1-2). This overlaps with the instantly claimed range of from 0.01 to 10% by weight.

Wenderoth et al. further teaches an antifreeze concentrate comprising (**instant component c**) from 0.05 to 5% by weight, based on a total amount of the concentrate, of one or more aliphatic, cycloaliphatic or aromatic amines of 2 to 15 carbon atoms, which may additionally contain ether oxygen atoms or hydroxyl groups ([0074]). This overlaps with the instantly claimed range of from 0.05 to 10% by weight.

Wenderoth et al. further teaches an antifreeze concentrate comprising (**instant component d**) from 0.05 to 5% by weight, based on a total amount of the concentrate,

of one or more mononuclear or dinuclear unsaturated or partly unsaturated heterocycles of 4 to 10 carbon atoms ([0075]). This overlaps with the instantly claimed range of from 0.05 to 10% by weight.

Wenderoth et al. further teaches the presence of higher glycols and glycol ethers such as diethylene glycol and dipropylene glycol.

Wenderoth et al. does not teach the presence of **(instant component a)** from 0.05 to 10% by weight, based on a total amount of the concentrate, of at least one polyethylene glycol and/or polypropylene glycol selected from the Markush group of instant **claim 1 (component a)** and mixtures thereof. However, Ashikhmin et al. teaches a coolant composition comprising ethylene glycol as well as triethyleneglycol (**instant claims 1-2**, abstract). Furthermore, Ashikhmin et al. teaches the triethyleneglycol as present from 0.5 to 1.5 wt%, which overlaps with the claimed range of from 0.05 to 10% by weight (**instant claim 1**). Wenderoth et al. and Ashikhmin et al. are combinable because they are concerned with the same field of endeavor, engine coolants with increased corrosion resistance. At the time of the invention a person having ordinary skill in the art would have found it obvious to add the glycol system (i.e. combined monoethylene glycol and the higher triethyleneglycol) of Ashikhmin et al. to the concentrate of Wenderoth et al. and would have been motivated to do so to produce a low freezing point coolant with increased corrosion resistance.

**Regarding claims 3-4**, Wenderoth et al. further teaches the concentrate wherein the one or more carboxamides and/or sulfonamides (**instant component b**) is at least

one member of the Markush group of instant **claims 3 and 4** ([0022], see also examples from [0023] to [0072]).

**Regarding claim 5**, Wenderoth et al. further teaches the concentrate further comprising (**instant component e**) from 0.05 to 5% by weight, based on the total amount of the concentrate, of at least one tetra(C<sub>1</sub>-C<sub>8</sub>-alkoxy)silanes or (tetra-C<sub>1</sub>-C<sub>8</sub>-alkyl esters of orthosilicic acid) ((tetra-C<sub>1</sub>-C<sub>8</sub>-alkyl orthosilicates))([0076]). This overlaps with the instantly claimed range of 0 to 10% by weight.

**Regarding claim 6**, Wenderoth et al. further teaches the concentrate further comprising at least one of the following compounds stated below ([0081]):

(**instant component f**) from 0.05 to 5% by weight, based on the total amount of concentrate, of at least one aliphatic or aromatic monocarboxylic acids, comprising 3 to 16 carbon atoms, in the form of an alkali metal, ammonium or substituted ammonium salts ([0082]). This overlaps with the instantly claimed range of from 0 to 10% by weight.

(**instant component g**) from 0.05 to 5% by weight, based on the total amount of the concentrate, of at least one aliphatic or aromatic dicarboxylic acids, comprising 4 to 20 carbon atoms, in the form of an alkali metal, ammonium or substituted ammonium salts ([0083]). This overlaps with the instantly claimed range of from 0 to 10% by weight.

(**instant component h**) at least one alkali metal borate, alkali metal phosphate, alkali metal silicate, alkali metal nitrite, alkali metal or alkaline earth metal nitrate, molybdate or alkali metal or alkaline earth metal fluoride, each in amounts of up to 1% by weight, based on the total amount of the concentrate ([0084]). This overlaps with the instantly claimed range of from 0 to 1% by weight.

(**instant component i**) up to 1% by weight, based on a total amount of the concentrate, of at least one hard water stabilizer based on polyacrylic acid, polymaleic acid, acrylic acid/maleic acid copolymers, polyvinylpyrrolidone, polyvinylimidazole, vinylpyrrolidone/vinylimidazole copolymers and/or copolymers of unsaturated carboxylic acids and an olefins ([0085]). This overlaps with the instantly claimed range of from 0 to 1% by weight.

**Regarding claim 7**, Wenderoth et al. further teaches the concentrate comprising soluble magnesium salts of organic acids, hydrocarbazoles, or quaternized imidazoles ([0093]).

**Regarding claims 8-9**, Wenderoth et al. further teaches the concentrate wherein the alkylene glycols and their derivatives and/or glycerol are present in amounts of at least 75% by weight ([0095] In 3-5) which overlaps with the instantly claimed range of  $\geq 75\%$  by weight; and wherein the alkylene glycol is an ethylene glycol, a propylene glycol, and/or mixtures thereof ([0095] In 4-13).

**Regarding claim 10**, Wenderoth et al. further teaches the concentrate whose pH is from 4 to 11 ([0094] In 1-2).

**Regarding claim 11**, Wenderoth et al. further teaches an aqueous coolant composition which comprises water and from 10 to 90% by weight of the antifreeze concentrate ([0098], see also Table 1, examples 1-6 wherein 69% by weight monoethylene glycol is present). This overlaps with the instantly claimed range of 30 to 70% by weight.

**Regarding claim 13**, Wenderoth et al. further teaches the concentrate wherein the heterocycles may be benzofused ([0078] ln 1-4) and/or carry additional functional groups ([0078] ln 6-8).

**Regarding claim 14**, Wenderoth et al. further teaches the concentrate wherein the at least one aliphatic, cycloaliphatic or aromatic amines are selected from the Markush group of instant claim 14 (see [0077]).

**Regarding claim 15**, Wenderoth et al. further teaches the concentrate wherein the at least one mononuclear or dinuclear unsaturated or partly unsaturated heterocycle are selected from the Markush group of instant claim 15 (see [0079]).

**Regarding claim 16**, Wenderoth et al. further teaches the concentrate wherein the at least one tetra (C<sub>1</sub>-C<sub>8</sub>-alkoxy)silane is selected from the Markush group of instant claim 16 (see [0080]).

**Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wenderoth et al. (WO 02/08354 A1, using U.S. PGPub 2003/0164470 as English language equivalent), in view of Ashikhmin et al. (SU 1838362 A3, Derwent Abstract).

Wenderoth et al. in view of Ashikhmin et al. render the composition of claim 11 obvious as set forth above. Wenderoth et al. further teaches use of the diluted coolant concentrate in magnesium-containing internal combustion engines ([0001]-[0003], [0098]-[0099], see also disclosed claims 1 and 8).



Furthermore the recitation that the basic formulation containing said aqueous coolant composition is to be used for preventing corrosion does not confer patentability to the claims since the recitation of an intended use does not impart patentability to otherwise old compounds or compositions. *In re Tuominen*, 671 F.2d 1359, 213 USPQ 89 (CCPA 1982). Furthermore, the recitation of a new intended use for an old product does not make a claim(s) to that product patentable. *In re Schreiber*, 44 USPQ 2d 1429, (Fed. Cir. 1997). See also MPEP § 2111.02 and § 2112 - § 2112.02.

**Claims 1 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenderoth et al. (WO 02/08354 A1, using U.S. PGPub 2003/0164470 as English language equivalent), in view of Kanai et al. (JP 04279690 A, Derwent Abstract).

Wenderoth et al. teaches an antifreeze concentrate ([0019] In 2) based on alkylene glycol, glycerol and/or their derivatives ([0019] In 2-3), the antifreeze concentrate comprising (instant component b) from 0.05 to 10% by weight of one or more carboxamides and/or sulfonamides (**see disclosed component a**) ([0020]), where the amides may be unsubstituted or alkyl-substituted ([0022] In 1-2) (this overlaps with the instantly claimed range of from 0.01 to 10% by weight); from 0.05 to 5% by weight of one or more aliphatic, cycloaliphatic or aromatic amines of 2 to 15 carbon atoms, which may additionally contain ether oxygen atoms or hydroxyl groups ([0074]) (**instant component c**) (this overlaps with the instantly claimed range of from 0.05 to 10% by weight); and from 0.05 to 5% by weight of one or more mononuclear or

dinuclear unsaturated or partly unsaturated heterocycles of 4 to 10 carbon atoms ([0075]) (**instant component d**) (this overlaps with the instantly claimed range of from 0.05 to 10% by weight). Wenderoth et al. further teaches the presence of higher glycols and glycol ethers and that mixtures of glycols may be used wherein suitable glycols include higher glycols such as dipropylene glycol ([0095]). Wenderoth et al. further teaches the concentrate comprising a mixture of p-toluenesulfonamide and 1H-1,2,4-triazole (see Example 16).

Wenderoth et al. does not specifically teach the higher glycols to include tripropylene glycol (**instant component a**). Kanai et al. teaches liquid coolants for internal combustion engines comprising 2-9C glycols and rust preventatives such as triazoles (abstract). Kanai et al. further teaches ethylene glycol, diethylene glycol, triethylene glycol, propylene glycol, tripropylene glycol and dipropylene glycol to be equivalent glycols. Kanai et al. and Wenderoth et al. are analogous art because they are concerned with the same field of endeavor, namely engine coolant compositions comprising higher glycols and rust preventatives. At the time of the invention a person having ordinary skill in the art would have found it obvious to use the 2-9C glycols i.e. tripropylene glycol of Kanai et al. in the mixture of glycols of Wenderoth et al. and would have been motivated to do so to obtain a long-lived coolant composition (Kanai et al. abstract). Furthermore, in view of the teaching of Kanai et al. that the above glycols are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art to substitute in the mixture of glycols of Wenderoth et al. dipropylene glycol or

propylene glycol with tripropylene glycol and thereby arrive at the present invention (See *In re Ruff* 118 USPQ 343 (CCPA 1958); see also MPEP 2144.06).

While Wenderoth et al. teaches mixtures of glycols, Wenderoth et al. does not specifically teach the mixtures wherein the higher glycol is present from 0.05 to 10% by weight. However, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicant's claims patentable in the absence of unexpected results. See *In re Aller*, 105 USPQ 233 and MPEP 2144.05. At the time of the invention a person having ordinary skill in the art would have found it obvious to optimize the amount of higher glycol in the composition and would have been motivated to do so in order to obtain a suitable liquid alcoholic freezing point ([0095]). A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. See *In re Boesch and Slaney*, 205 USPQ 215.

#### ***Allowable Subject Matter***

**Claim 18** is allowed. The prior art of record does not teach or render obvious claim 18 as substantially set forth, especially in view of instant component ii) 3wt% of tripropylene glycol. The closest prior art of record, Wenderoth et al. (WO 02/08354 A1, using US PGPub 2003/0164470 as English language equivalent) teaches a minimum glycol content of 75% (Wenderoth et al. [0095]). Claim 18 is openly readable on a mixture of components based on instant component i) 2.5 wt% of a mixture of p-toluenesulfonamide and 1H-1,2,4-triazole, based on instant component iii) 50 wt%

distilled water, and based on instant monoethylene glycol, which results in a glycol content of far less than the 75% required by Wenderoth et al. However, it is noted that Kanai et al. (JP 0427960A) suggests that ethylene glycol, diethylene glycol, triethylene glycol, propylene glycol, dipropylene glycol and tripropylene glycol are substantial equivalents.

### ***Response to Arguments***

**Claims 1-17** are pending: **Claims 1-9 and 11-13** are amended, **claim 10** is as previously presented and **claims 14-18** are new.

The objections to the specification and abstract are withdrawn.

The objections to claims 1-13 as noted in the previous office action are withdrawn as a result of Applicant's amendments. However, note the new objection to claim 13 (see above) as a result of Applicant's amendment.

The 35 U.S.C. 112, second paragraph, rejections of claims 7 and 11-13 are withdrawn as a result of Applicant's amendments.

Applicant's arguments filed **3 September 2008** have been fully considered but they are not persuasive.

Applicant's arguments that there is no motivation or suggestion to combine the reference of Ashikhmin et al. with Wenderoth et al. for the purpose of adding triethylene glycol has been considered but is not persuasive. The broad teaching of triethylene glycol as being useful in low freezing point, increased corrosion resistant coolant

compositions would be enough to one of ordinary skill in the art to use and/or add triethylene glycol to a coolant composition.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE L. STANLEY whose telephone number is (571)270-3870. The examiner can normally be reached on Monday-Thursday, 7:30 am - 5 pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

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/JLS/